

Claims

That which is claimed is:

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A<sup>2</sup> } 1. A polypeptide that modulates programmed cell death, comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3 and SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8.

10 2. A composition comprising a polypeptide as of claim 1 and a pharmaceutically acceptable carrier thereof.

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15 3. The polypeptide according to claim 1, wherein the amino acid sequence is SEQ ID NO: 2 or SEQ ID NO: 8.

4. An apoptotically active polypeptide having at least 60% amino acid identity over the complete amino acid sequence of SEQ ID NO: 1.

20 5. The polypeptide according to claim 4, wherein the polypeptide has a sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 3 and SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8

25 6. A method for preventing or treating a disorder associated with a decrease in apoptosis, the method comprising:  
administering to a subject in need of such treatment an effective amount of a pharmaceutical composition comprising a apoptotically active protein having an amino acid sequence (i) of SEQ ID NO: 1 or (ii) with at least 60% homology to SEQ ID NO: 1.

30 7. The method according to claim 6, wherein the homologous amino acid sequence (ii) is selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8.

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8. The method according to claim 7, wherein the homologous amino acid sequence is SEQ ID NO: 2.

9. A polynucleotide that encodes for a protein that modulates apoptosis, the polynucleotide comprising a nucleotide sequence selected from the group consisting of SEQ ID NO: 6, SEQ ID NO: 7 and SEQ ID NO: 9.

10. An apoptotically active polynucleotide that hybridizes with at least one nucleotide sequence according to claim 9 under high stringency conditions.

11. An apoptotically active polynucleotide that has at least 90% homology to the nucleotide sequences of claim 9.

12. A method for detecting a polynucleotide encoding a protein having at least one amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8 in a biological test sample containing nucleic acids, the method comprising the steps of:

(a) mixing at least a fragment of a complement of the polynucleotide sequence encoding at least a fragment of a protein having at least one amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8 with the biological test sample containing nucleic acids, to form a resulting mixture;

(b) subjecting the mixture to conditions such that hybridization will occur between the biological test sample and the complement of the polynucleotide sequence encoding at least a fragment of a protein having at least one amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8; and

(c) detecting hybridization complexes in the mixture subjected to hybridization conditions, wherein the presence of a hybridization complex correlates with the presence of a polynucleotide encoding a protein having at least one amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8 in the biological test sample.

13. A method for screening a potential cellular apoptosis inhibiting compound for determining its utility as a therapeutic agent for treatment of diseases associated with increased programmed cell death, the method comprising:

(a) contacting a cell which expresses a protein including at least one amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8 with the test compound; and

(b) determining the level of apoptosis activity of the cell, wherein a decrease in activity identifies a compound that inhibits apoptotic activity.

14. An expression vector containing at least a fragment of a polynucleotide sequence, wherein the polynucleotide has a nucleotide sequence that encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8, or its complement.

15. A transformed host cell containing an expression vector as in claim 14.

16. The transformed host cell according to claim 15, wherein the host cell has been cultured for expression of the polypeptide in recoverable form.

17. A purified antibody which binds to a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8.

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18. A method for preventing or treating a disorder associated with decreased apoptosis comprising:

(a) administering to a subject in need of such treatment a pharmaceutical composition comprising a polypeptide including at least one amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8.

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19. A vaccine comprising a polynucleotide sequence that encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 8.

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